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2015 Coal Combustion Product (CCP) Production & Use Survey Report

| Beneficial Utilization versus Production Totals (Short Tons) | | | | | | | | | |
|--|---|------------|-------------|------------|-------------------------------|-------------------------------|-----------|------------|--|
| 2015 CCP Categories | Fly Ash | Bottom Ash | Boiler Slag | FGD Gypsum | FGD Material Wet Scrubbers | FGD Material Dry Scrubbers | FGD Other | FBC Ash | CCP Production / Utilization Totals |
| Total CCPs Produced by Category | 44,365,587 | 12,010,425 | 2,228,205 | 32,661,536 | 11,313,960 | 1,311,947 | 206,314 | 13,191,460 | 117,289,432 |
| Total CCPs Used by Category | 24,062,786 | 4,819,205 | 1,866,912 | 17,058,178 | 1,249,438 | 252,849 | 20,697 | 11,723,843 | 61,053,908 |
| Concrete/Concrete Products /Grout | 15,737,238 | 570,092 | 33,290 | 409,134 | 0 | 0 | 0 | 0 | 16,749,754 |
| Blended Cement/ Feed for Clinker | 3,629,151 | 1,130,802 | 0 | 1,649,934 | 0 | 0 | 0 | 0 | 6,409,887 |
| 3. Flowable Fill | 107,263 | 9,106 | 0 | 0 | 0 | 0 | 0 | 0 | 116,369 |
| Structural Fills/Embankments | 1,277,356 | 1,561,531 | 305,770 | 1,221,865 | 100,940 | 0 | 0 | 0 | 4,467,462 |
| 5. Road Base/Sub-base | 178,281 | 311,779 | 21 | 0 | 0 | 0 | 0 | 0 | 490,081 |
| Soil Modification/Stabilization | 216,483 | 66,253 | 0 | 8,053 | 0 | 0 | 0 | 0 | 290,789 |
| 7. Mineral Filler in Asphalt | 52,784 | 0 | 14,176 | 0 | 0 | 0 | 11,479 | 0 | 78,440 |
| 8. Snow and Ice Control | 0 | 527,695 | 77,935 | 0 | 0 | 0 | 0 | 0 | 605,630 |
| 9. Blasting Grit/Roofing Granules | 0 | 184,712 | 1,400,455 | 173 | 0 | 0 | 0 | 0 | 1,585,340 |
| 10. Mining Applications | 1,128,682 | 73,416 | 0 | 807,280 | 0 | 215,974 | 0 | 11,593,760 | 13,819,113 |
| 11. Gypsum Panel Products (formerly Wallboard) | 0 | 28,378 | 0 | 11,322,016 | 973,785 | 0 | 0 | 0 | 12,324,178 |
| 12. Waste Stabilization/Solidification | 1,138,078 | 242 | 0 | 0 | 0 | 0 | 9,218 | 130,083 | 1,277,621 |
| 13. Agriculture | 2,409 | 1,788 | 0 | 1,392,693 | 174,713 | 0 | 0 | 0 | 1,571,602 |
| 14. Aggregate | 0 | 173,472 | 0 | 0 | 0 | 0 | 0 | 0 | 173,472 |
| 15. Oil/Gas Field Services | 181,907 | 0 | 0 | 0 | 0 | 36,875 | 0 | 0 | 218,782 |
| 16. Miscellaneous/Other | 413,152 | 179,940 | 35,265 | 247,030 | 0 | 0 | 0 | 0 | 875,387 |
| Summary Utilization to Production Rate | | | | | | | | | |
| CCP Categories | Fly Ash | Bottom Ash | Boiler Slag | FGD Gypsum | FGD Material Wet Scrubbers | FGD Material Dry Scrubbers | FGD Other | FBC Ash | CCP Utilization Total |
| Totals by CCP Type/Application | 24,062,786 | 4,819,205 | 1,866,912 | 17,058,178 | 1,249,438 | 252,849 | 20,697 | 11,723,843 | 61,053,908 |
| Category Use to Production Rate (%) | 54.24% | 40.13% | 83.79% | 52.23% | 11.04% | 19.27% | 10.03% | 88.87% | 52.05% |
| 2015 Cenospheres Sold (Pounds) | 948.787 Data in this survey represents 182 GWs of Name Plate rating of the total industry wide approximate 291 GW capacity based on EIA's July 2016 Electric Power Monthly. | | | | | | | | |

Notes:

These are estimates for entire U.S. utility and IPP sectors calculated by dividing the survey respondents' data by the portion of the overall industry's coal burn they represent, as reported in the July 2016 EIA Electric Power Monthly (57%).